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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/683,600
Filing Date: October 09, 2003
Appellant(s): CHOI, MICHAEL

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Group 3700

John D. Russell
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5/11/2006 appealing from the Office action mailed 12/12/2005.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Ground of Rejection to be reviewed on Appeal

The appellant's statement of the issues in the brief is correct.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,728,980	Zarnick	3-1998
6,078,671	Kawanishi et al.	6-2000
5,722,357	Choi	3-1998

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarnick (U.S. Patent Number 5,728,980) in view of Kawanishi et al. (U.S. Patent Number 6,078,671) or vice versa.

Buildings and vehicles are intended use of noise reduction technique on ventilation system. Zarnick discloses the invention relates to a building as argued by the Applicant. However, the building is an intended use as discussed by Zarnick since "building" is not in the claims of Zarnick. Zarnick's silencers could be used in a vehicle since it's used in the duct. The duct can have rectangular shape (claims 4-6) or other shapes used in the prior art (claims 1-3). Referring to Fig.1, the panels consist fiberglass and polyvinylfluoride material. The duct could also be made of the same type of panels. Preferable the duct silencers would be placed in a duct at a position downstream from the fan and the bend is at the downstream of the panels. Zarnick disclose a rectangular duct. However, Zarnick does not disclose radial vanes. Kawanishi et al. disclose radial vanes in a circular duct (Figs.9 and 10) in the same field of endeavor for the purpose of sound attenuation. The teaching part is the radial vanes in the duct. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Zarnick with radial vanes in view of Kawanishi et al. so as to reduce the sound in the duct. In regard to direct the air to a passenger compartment of the vehicle, Zarnick discloses the noise reduction at the downstream of the blower of the air conditioning unit, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide this noise reduction device in the air conditioning unit of the vehicle. Under the principals of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. *Ir re King*, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986).

If Applicant does not agree Zarnick in view of Kawanishi. Claims are also rejectable over Kawanishi et al. in view of Zarnick. Kawanishi et al. disclose an silencer for attenuating a noise transmitted through a duct. Referring to Figs.9 and 10, the system comprises a duct 14, blower 22 and radial vane 226 at the downstream of the blower 22. Zarnick discloses the material and a bended duct. Theoretically, the vanes reduce noise no matter there is a bend at the downstream or not. The bend is required in the duct system to deliver the conditioned air to a desired place.

2. Claims 14,15,19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarnick (U.S. Patent Number 5,728,980) in view of Choi (U.S. Patent Number 5,722,357).

Buildings and vehicles are intended use of noise reduction technique on ventilation system. Zarnick discloses the invention relates to a building as argued by the Applicant. However, the building is an intended use as discussed by Zarnick since "building" is not in the claims of Zarnick. Zarnick's silencers could be used in a vehicle since it's used in the duct. Zarnick discloses a duct silencer as shown in Fig.1. The panels consist fiberglass and polyvinylfluoride material. The duct could also be made of the same type of panels. Preferable the duct silencers would be placed in a duct at a position downstream from the fan and the bend is at the downstream of the panels. Zarnick discloses a rectangular duct. However, Zarnick does not disclose radial vanes. Choi discloses radial vanes in a circular duct in analogous art of flow control for the purpose of sound attenuation. Also, Choi discloses the material, sizes, vane shapes and integrally formed as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the apparatus of Zarnick with radial vanes in view of Choi so as to reduce the sound in the duct. In regard to direct the air to a passenger compartment of the vehicle, Zarnick discloses the noise reduction at the downstream of the blower of the air conditioning unit, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide this noise reduction device in the air conditioning unit of the vehicle. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The present application used the prior art noise reduction in the duct to the vehicle compartment. Under the principals of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. *Ir re King*, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986).

(11) Response to Argument

A. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zarnick in view of Kawanishi et al. or vice versa.

In re pages 10-19, Applicant first argues that Zarnick relates to building ductwork and no mention anywhere in the reference that the system can or should be applied to passenger compartment of a vehicle (p10). In response, the Examiner asserts that noise reduction in the duct can be applied to the building duct and vehicle duct. The Examiner remains the position that using on the vehicle is an intended use. Zarnick discloses the duct silencer will create a better acoustical environment for the occupants (col.1, lines 26-27) and preferable would be placed in a duct at a position downstream from the fan (col.2, lines 22-23). Fig.1 of Zarnick presents the duct has bends. Therefore, the prior art disclose to reduce noise on the air-conditioning system to comfort the occupants in a room and therefore the comforting for the occupants in the building and vehicle are intended use.

Second, the Applicant argues even if the references are combined, there is still no disclosure of using the modified combination to direct flow to a passenger compartment of a vehicle traveling on the road (p13). The Applicant asserts that the method requires directing flow to a passenger compartment of a vehicle via a duct with specific structural features including radial vanes and the method requires operating a blower fan to generate the flow. The Examiner respectively disagrees with Applicant's arguments. The response about using for the vehicle has been discussed above. In response to the specific features and radial vanes, Fig.1 of Zarnick presents the duct has a bend with blower fan coupled to the duct upstream of the bend and a set of vanes is located in the duct. Zarnick discloses the duct silencer will create a better acoustical environment for the occupants (col.1, lines 26-27) and preferable would be placed in a duct at a position downstream from the fan (col.2, lines 22-23). Kawanishi et al. disclose the duct silencer is radial vanes located at the downstream of the fan (Figs.5,6,9 and 10). In operation, the fan generates flow in the duct with vanes silencer (Zarnick), the radial vanes silencer (Kawanishi et al.) protrude inwardly into the flow in the duct and the radial vanes reducing noise caused by the flow in the duct system including bend (Fig.1 of Zarnick).

Third, the Applicant argues the cited references are simply inapplicable to Claim 14 and one another (p14). Applicant asserts the standing rejection identifies no evidence to support the alleged motivation to combine building ductwork with an active noise cancellation system and the building is a large, fixed object that does not move, unlike a vehicle. The response about using for the vehicle has been discussed in the first part of this response, which states the duct noise reductions on the vehicle and building are intended use. The Examiner respectively disagrees with Applicant's argument about to reduce noise on the vehicle will not look to buildings due to the size difference. The prior art of Zarnick discloses to reduce noise on the air-conditioning system to comfort the occupants and therefore the comforting for the occupants in the building and vehicle are intended use. Flow generated noise in the duct using vanes to reduce the noise are disclosed in the prior art. Flow through a larger duct in the building and a smaller duct in the vehicle both generate noise. Ordinary skill in the art at the time the invention was made will look flow noise reduction method for the duct to solve the duct noise problem because the noise problem is in the duct flow no matter it is vehicle duct or building duct. Zarnick not only addresses noise carried from different rooms as asserted by the Applicant but also addresses noise carried from heating plant (air-conditioning system) to the room (col.1, lines 8-10). The Examiner also disagrees that "there is no teaching or suggesting in Zarnick that the duct silencers could be used in ducts of a different shape, that ducts of a different shape could be used in place of disclosed duct silencers, that the duct silencers by themselves are not completely effective, or that there is a problem with discontinuities". Zarnick discloses the duct has discontinuities/bends (Fig.1) and the different shapes are obvious to ordinary skill in the art to have the shape of silencer to match the duct shape. Zarnick discloses a rectangular silencer with a rectangular duct and Kawanishi et al. disclose a circular silencer with a circular duct. In order to reduce noise, both references teach that the shapes of silencer and duct are matched. Ordinary skill in the art at the time the invention was made will modify the silencer to fit the duct in order to match the geometry of the duct and silencer by extending or reducing the lengths of the vanes. The reference of Kawanishi discloses microphone/speaker and vanes silencer to reduce flow through the duct. The teaching part of this prior art is the radial vanes silencer and other limitations of the claims are disclosed in Zarnick. The extra noise reduction from microphone/speaker active control is not applied in the Office Action. In regard to classification argument, there should be cross-reference searched in the class/subclass. This application is classified to class 62 because the cancelled claim 13 of the application includes the "air-conditioned air" in the limitation. The other classes searched are cross-reference classes because the flow noise reduction limitations in the claims. The prior art of Zarnick discloses the air-conditioning system in the specification but not in the claims and is classified to class 181. Therefore, the assigned class and cross-reference classes are searched in the application.

Fourth, the Applicant argues that there is no evidence of record that one skilled in the art would have a reasonable expectation of success in combining Zarnick with Kawanishi et al. (p16). The Examiner respectively disagrees the validity of the prior art of Kawanishi et al. As discussed in the previous paragraph, the reference of Kawanishi discloses both microphone/speaker and vanes silencer to reduce flow through the duct. The teaching part of the prior art of Kawanishi is the radial vanes silencer and the limitations of bend and location of vanes are disclosed in Zarnick. The extra noise reduction by the microphone/speaker active noise cancellation is not applied by the Examiner in the Office Action. The Examiner remains the position that using on the vehicle is an intended use since prior art includes all the structural limitations such as duct, radial vanes silencer, fan, duct bend and making comfort to the occupants.

Fifth, the Applicant argues the theory of inherency cannot be used to cure the clearly missing disclosure of the Zarnick/Kawanishi combination (p17). In regard to this, the Examiner rejected the claims based on all the claimed limitations are disclosed in the prior art of Zarnick/Kawanishi except using in the passenger compartment of a vehicle. The inherency used in the rejection implies the prior arts have all the claimed structure limitations except using on the vehicle. It is obvious to perform the claimed method claim with the structures in the prior art. The Examiner remains the position that using on the vehicle is an intended use since prior art includes all the structural limitations such as duct, radial vanes silencer, fan, duct bend and making comfort to the occupants in a room.

B. Claim 14 is not properly rejected under Zarnick in view of Choi because even if combined, the combination lacks explicit claim elements and there is no motivation to combine the references.

In re pages 19-24, Applicant first argues even if the cited references are combined, there is no disclosure of using the modified combination to direct flow to a passenger compartment of a vehicle traveling on the road (p20). Again, the argument and response are similar to the argument and response presented under the rejection under Zarnick in view of Kawanishi et al. The Examiner remains the position that using on the vehicle is an intended use since prior art includes all the structural limitations such as duct, radial vanes silencer, fan, duct bend and making comfort to the occupants in a room.

Second, the Applicant argues the cited references are simply inapplicable to Claim 14 and one another (p21). Applicant asserts the standing rejection identifies no evidence to support the alleged motivation to combine building ductwork with an intake manifold system of an internal combustion engine. The response about using for the vehicle has been discussed several times before which states the duct noise reduction on the vehicle and combustion are intended use. The Examiner respectively disagrees with Applicant's argument that the passenger compartment of vehicle is likely orders of magnitude greater than that engine displacement and this is no reason to combine. The noise generated in the duct system has no bearing to the duct sizes and the main concept of prior art is to reduce the noise of the duct. Flow through a larger duct in the building and a smaller duct in the engine both generate noise. The prior art of Zarnick discloses to reduce noise on the air-conditioning system to comfort the occupants in a room and therefore the comforting for the occupants in the building and vehicle are intended use. Flow generated noise in the duct and using vanes to reduce the noise are disclosed in the prior art of Zarnick. Ordinary skill in the art at the time the invention was made will look flow noise reduction method for the duct to solve the duct noise problem because the noise problem is in the duct flow which no matter is using in the vehicle duct or engine duct. Zarnick not only addresses noise carried from different rooms as asserted by the Applicant but also addresses noise carried from heating plant (air-conditioning system) to the room (col.1, lines 8-10). The Examiner also disagrees that "nothing in Choi to indicate that radial vanes would be successful at reducing noise in the rectangular building ductwork of Zarnick. Zarnick discloses a rectangular silencer with a rectangular duct and Choi discloses a circular silencer with a circular duct. In order to reduce noise, both references teach that the shapes of silencer and duct are matched. Ordinary skill in the art at the time the invention was made will modify the silencer shape to fit the duct shape in order to match the geometry of the duct and silencer by extending or reducing the lengths of the vanes. In regard to classification argument, there should be cross-reference searched class/subclass. This application is classified to class 62 because the claim 13 of the application includes the air-conditioned air in the limitation. The other searched classes are cross-reference classes because the flow noise reduction limitations in the claims. The prior art of Zarnick discloses the air-conditioning system in the specification but not in the claims and is classified to class 181. Therefore, the assigned class and cross-reference classes are searched in this application.

Third, the Applicant argues that there is no evidence of record that one skilled in the art would have a reasonable expectation of success in combining Zarnick with Choi (p22). The Examiner respectively disagrees that Applicant argues the validity of the prior art of Choi. The teaching part of Choi is the radial vanes silencer and the limitations of bend and location of vanes are disclosed in Zarnick. The extra element of throttle in Choi is irrelevant to the rejection. Again, the Examiner remains the position that using on the vehicle is an intended use since prior art includes all the structural limitations such as duct, radial vanes silencer, fan, duct bend and making comfort to the occupants.

Fourth, the Applicant argues the theory of inherency cannot be used to cure the clearly missing disclosure of the Zarnick/Choi combination (p23). In regard to this, the Examiner rejected the claims based on all the claimed limitations are disclosed in the prior art of Zarnick/Choi except using in the passenger compartment of a vehicle. The inherency used in the rejection implies the prior arts have all the claimed structure limitations except using on the vehicle. It is obvious to perform the claimed method claim with the structures in the prior art. The Examiner remains the position that using on the vehicle is an intended use since prior art includes all the structural limitations such as duct, radial vanes silencer, fan, duct bend and making comfort to the occupants.

C. Claim 20 is not properly rejected under Zarnick in view of Choi because there is no evidence of record to support the picking and choosing among the prior art teachings.

In re pages 24-25, Applicant argues "[T]he cited references contain opposite teachings – Zarnick utilizes linear vanes the span the duct, while Figure 10 of Choi discloses radial vanes that do not span the duct. There is no teaching in either reference that the particular vanes of Choi in the ductwork of Zarnick will provide any advantage whatsoever. The selection of such details can only based on the hindsight leaned from Applicant's disclosure, and as such is improper". The technical issue is to have radial vanes silencer to reduce noise in the duct. Fig.10

of Choi discloses radial vanes do not span the duct as claimed and Figs.11 and 12 of Choi disclose the linear vanes span the duct. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace linear vane with radial vanes and is not hindsight gleaned from Applicant's disclosure.

D. Conclusion

For the above reasons, it is believed that the rejections should be sustained. Examiner remains the position that using on the vehicle is an intended use since prior art includes all the structural limitations such as duct, radial vanes silencer, fan, duct bend and making comfort to the occupants.

Respectfully submitted,

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